DETAILED ACTION

Claim Rejections - 35 USC § 112

1. The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

2. Claim 33 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

"A rejection under § 112, ¶ 2 may be appropriate in the following situations when examining means-plus-function claim limitations under § 112, ¶ 6:

(1) when it is unclear whether a claim limitation invokes § 112, ¶ 6;

(2) when § 112, ¶ 6 is invoked and there is no disclosure or there is insufficient disclosure of structure, material, or acts for performing the claimed function; and/or

(3) when § 112, ¶ 6 is invoked and the supporting disclosure fails to clearly link or associate the disclosed structure, material, or acts to the claimed function."

See *Supplemental Examination Guidelines for Determining Compliance with 35 USC §112 and for Treatment of related Issues in Patent Applications*, 76 FR 7162, 7168 (Feb. 9, 2011).

Regarding claim 33, the claim contains at least one limitation that invokes §112 ¶6, while failing to provide sufficient disclosure of structure, material, or acts for performing the claimed function. *See Vas-Cath, Inc. v. Mahurkar*, 935 F.2d 1555, 1565, (Fed. Cir. 1991); *see also In re Donaldson Co.*, 16 F.3d 1189, 1195 (Fed. Cir. 1994) (*en banc*). Thus, claim 33 is rejected under §112 ¶2.

Applicant is required to:

(a) Amend the claim so that the claim limitation will no longer be a means (or step, or non-structure terms) plus function limitation under 35 U.S.C. 112, sixth paragraph; or

(b) Amend the written description of the specification such that it expressly recites what structure, material, or acts perform the claimed function without introducing any new matter (35 U.S.C. 132(a)).

If applicant is of the opinion that the written description of the specification already implicitly or inherently discloses the corresponding structure, material, or acts so that one of ordinary skill in the art would recognize what structure, material, or acts perform the claimed function, applicant is required to clarify the record by either:

(a) Amending the written description of the specification such that it expressly recites the corresponding structure, material, or acts for performing the claimed function and clearly links or associates the structure, material, or acts to the claimed function, without introducing any new matter (35 U.S.C. 132(a)); or

(b) Stating on the record what the corresponding structure, material, or acts, which are implicitly or inherently set forth in the written description of the specification, perform the claimed function. For more information, see 37 CFR 1.75(d) and MPEP §§ 608.01(o) and 2181.

Rationale for invoking §112 6¶

Examiners will apply § 112, ¶ 6 to a claim limitation that meets the following conditions:

(1) The claim limitation uses the phrase "means for" or "step for" or **a** non-structural term that does not have a structural modifier;

(2) the phrase "means for" or "step for" or the non-structural term recited in the claim is modified by functional language; and

(3) the phrase "means for" or "step for" or the non-structural term recited in the claim is not modified by sufficient structure, material, or acts for achieving the specified function.

This modifies the 3-prong analysis in MPEP § 2181, which will be revised in due course. *See Supplemental Examination*, 76 FR at 7167.

"When the claim limitation does not use the phrase "means for" or "step for," examiners should determine whether the claim limitation uses a nonstructural term (a term that is simply a substitute for the term "means for"). Examiners will apply § 112, ¶6 to a claim limitation that uses a nonstructural term associated with functional language, unless the nonstructural term is (1) preceded by a structural modifier, defined in the specification as a particular structure or known by one skilled in the art, that denotes the type of structural device (e.g., "filters"), or (2) modified by sufficient structure or material for achieving the claimed function. The following is a list of non-structural terms that may invoke § 112, ¶6: "mechanism for," "module for," "device for," "unit for," "component for," "element for," "member for," "apparatus for," "machine for," or "system for." This list is not exhaustive, and other non-structural terms may invoke § 112, ¶6." *See id.*

Regarding claim 33, the claim recites, *inter alia*, a system comprising “means for performing,” "means for thereafter communicating," “means for measuring,” and "means for performing.” The “means for” limitations are not modified by any structural limitations, nor claim to modify the invention to include sufficient structure, material, or acts for achieving any of the specified functions. As result, the means invoke §112 ¶6.

Rationale for determining there is insufficient disclosure

For a computer-implemented means-plus-function claim limitation that invokes 35 U.S.C. 112, sixth paragraph, the corresponding structure is required to be more than simply a general purpose computer or microprocessor. *See Aristocrat*, 521 F.3d 1328, 1333, (Fed. Cir. 2008). The corresponding structure for a computer-implemented function must include the algorithm as well as the general purpose computer or microprocessor. *See WMS Gaming, Inc.*, 184 F.3d 1339 (Fed. Cir. 1999). The written description of the specification must at least disclose the algorithm that transforms the general purpose microprocessor to a special purpose computer programmed to perform the disclosed algorithm that performs the claimed function. *See Aristocrat*, 521 F.3d at 1338. Applicant may express the algorithm in any understandable terms including as a mathematical formula, in prose, in a flow chart, or in any other manner that provides sufficient structure. *See Finisar Corp.*, 523 F.3d 1323, 1340, (Fed. Cir. 2008).

A rejection under 35 U.S.C. 112, second paragraph, is appropriate if the written description of the specification discloses no corresponding algorithm. *See Aristocrat*, 521 F.3d at 1337-38. For example, merely referencing to a general purpose computer with appropriate programming without providing any detailed explanation of the

appropriate programming, *See Id.* at 1334, or simply reciting software without providing some detail about the means to accomplish the function, would not be an adequate disclosure of the corresponding structure to satisfy the requirements of 35 U.S.C. §112, second paragraph, even when one of ordinary skill in the art is capable of writing the software to convert a general purpose computer to a special purpose computer to perform the claimed function. *See Finisar*, 523 F.3d at 1340-41.

Regarding claim 33, the specification provides structure for implementing the functional limitations, however that structure is limited to general purpose computers. *See* pages 3-4. The applicant is reminded that general purpose computers is not sufficient to provide the required structural disclosure, *Aristocrat*, 521 F.3d at 1338, and that indefiniteness analysis does not turn on the name of the structure that does the processing. *See Net MoneyIN, Inc. v. VergiSign, Inc.*, 545 F.3d 1359, 1366-67 (Fed. Cir. 2008). The applicant's specification fails to provide any detailed explanation of the algorithm that transforms the general purpose microprocessor to a special purpose computer programmed to perform the disclosed algorithm that performs the claimed function. The applicant is reminded that the requirement for the disclosure of an algorithm can be avoided if one of ordinary skill in the art is capable of writing the software to convert a general purpose computer to a special purpose computer to perform the claimed function is unpersuasive because the understanding of one skilled in the art does not relieve the patentee of the duty to disclose sufficient structure to support means-plus-function claim terms. The specification must explicitly disclose the algorithm for performing the claimed function, and simply reciting the claimed function in

the specification will not be a sufficient disclosure for an algorithm which, by definition, must contain a sequence of steps. See *Supplemental Examination Guidelines*, 76 FR at 7168. As a result, claim 33 has failed the §112 ¶6 requirement of disclosing the corresponding structure that performs the functional limitations.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

4. Claims 1 and 4-7, 10-15, 21-33 are rejected under 35 U.S.C. 103(a) as being unpatentable over Chawla in view of Fedyk et al. (US 7,154,851 B1), and further in view of Ravi (US 6,292,834).

5. Regarding claim 1, Chawla teaches a method of operating a data processing network, comprising:

performing an initial operating frequency negotiation between a server and a switch to which the server is connected, wherein the initial operating frequency negotiation establishes an initial total bandwidth capacity of a network link between the server and the switch at an initial operating frequency of the network link (col. 5, lines 20-25 and col. 12, line 61 – col. 13, line 4);

following the initial operating frequency negotiation, the server communicating network traffic with the switch over the network link and measuring an effective data rate

of the network traffic communicated between the server and the switch over the network link (col. 12, line 61 – col. 13, line 4).

Chawla teaches the negotiation and determination of an effective data rate of a current bandwidth of the link and performing subsequent negotiations to establish a modified operating frequency wherein the modified operating frequency is closer to the effective data rate than the initial operating frequency (col. 13, lines 20-24) but does not clearly recite wherein the negotiation is performed at the network link layer. However, in related art and in the same field of endeavor, Fedyk teaches a method for dynamically assigning bandwidth at a link layer level (fig. 2 and col. 3, line 61 - col. 4, line 3) wherein a path connection setup routine is performed based on available bandwidth and link/class traffic engineering. One of ordinary skill in the art at the time of the applicants' invention would have found it obvious to implement the ability to optimize link layer negotiation as taught by Fedyk in combination with the teachings of Chawla which teaches the dynamic allocation of bandwidth. One of ordinary skill in the art would have been motivated to combine the teachings of Chawla and Fedyk in order to create a dynamic allocation of bandwidth method/system at a link level (Fedyk, col. 3, ll. 41-46).

Chawla teaches the determination of an effective data rate of a current bandwidth of the link and performing subsequent negotiations to establish a modified operating frequency wherein the modified operating frequency is closer to the effective data rate than the initial operating frequency (col. 13, lines 20-24) but does not clearly recite the steps of "instructions that detect whether or not the link is underutilized by, instructions that, responsive to detecting that the link is underutilized, performs a

negotiation to establish a reduced operating frequency of the link." However, in related art and in the same field of endeavor, Ravi teaches a method for dynamically adjusting bandwidth rates based on performance characteristics, including a step for determining the possibility to change the effective data rate to below the capacity or decreasing bandwidth of a link as is possible (see column 7 of Ravi, lines 16-25). One of ordinary skill in the art at the time of the applicants' invention would have found it obvious to implement the ability to decrease the bandwidth capacity of a link as taught by Ravi in combination with the teachings of Chawla which teaches the dynamic allocation of bandwidth. One of ordinary skill in the art would have been motivated to combine the teachings of Chawla and Ravi in order to create a dynamic allocation of bandwidth method/system wherein it is desirable to provide efficient transmissions of multimedia streams which are deemed quite well known and used very often in the Internet realm (Ravi, col. 1, ll. 16-25).

6. Regarding claim 4, Chawla teaches the method wherein the initial and subsequent link layer operating frequency negotiations are compliant with the IEEE 802.3 standard (Chawla, col. 11, lines 25-36, Chawla discloses the use of wireless networks, IEEE 802.3 is considered just an example of a wireless network. The utilization of IEEE 802.3 is therefore considered well-known and would have been an obvious variation to one of ordinary skill in the art.).

7. Regarding claim 5, Chawla teaches the method wherein measuring the effective data rate includes accumulating information indicative of an amount of network traffic

over the link during a specified interval and calculating the effective data rate based thereon (Chawla, col. 13, lines 20-27).

8. Regarding claim 6, Chawla and Ravi teach the method wherein the method further comprises:

responsive to determining that the effective data rate is greater than a specified percentage of the initial total bandwidth capacity of the link, performing a subsequent link layer operating frequency negotiation to establish an increased total bandwidth capacity of the network link at an increased operating frequency of the link, wherein the increased operating frequency is higher than the initial operating frequency (Chawla, col. 13, lines 10-20).

9. Regarding claim 7, Chawla teaches a data processing system, comprising:

a processor, memory, and a network interface connected to a switch via a network link (fig. 3);

wherein the network interface performs an initial operating frequency negotiation with the switch that establishes an initial total bandwidth capacity of the network link at an initial operating frequency of the network link and thereafter communicates network traffic with the switch over the network link and measures an effective data rate of the network traffic communicated between the data processing system and the switch over the network link (col. 5, lines 20-25 and col. 12, line 61 – col. 13, line 4).

Chawla teaches the negotiation and determination of an effective data rate of a current bandwidth of the link and performing subsequent negotiations to establish a modified operating frequency wherein the modified operating frequency is closer to the

effective data rate than the initial operating frequency (col. 13, lines 20-24) but does not clearly recite wherein the negotiation is performed at the network link layer. However, in related art and in the same field of endeavor, Fedyk teaches a method for dynamically assigning bandwidth at a link layer level (fig. 2 and col. 3, line 61 - col. 4, line 3) wherein a path connection setup routine is performed based on available bandwidth and link/class traffic engineering. One of ordinary skill in the art at the time of the applicants' invention would have found it obvious to implement the ability to optimize link layer negotiation as taught by Fedyk in combination with the teachings of Chawla which teaches the dynamic allocation of bandwidth. One of ordinary skill in the art would have been motivated to combine the teachings of Chawla and Fedyk in order to create a dynamic allocation of bandwidth method/system at a link level (Fedyk, col. 3, ll. 41-46).

Chawla teaches the determination of an effective data rate of a current bandwidth of the link and performing subsequent negotiations to establish a modified operating frequency wherein the modified operating frequency is closer to the effective data rate than the initial operating frequency (col. 13, lines 20-24) but does not clearly recite the steps of "instructions that detect whether or not the link is underutilized by, instructions that, responsive to detecting that the link is underutilized, performs a negotiation to establish a reduced operating frequency of the link." However, in related art and in the same field of endeavor, Ravi teaches a method for dynamically adjusting bandwidth rates based on performance characteristics, including a step for determining the possibility to change the effective data rate to below the capacity or decreasing bandwidth of a link as is possible (see column 7 of Ravi, lines 16-25). One of ordinary

skill in the art at the time of the applicants' invention would have found it obvious to implement the ability to decrease the bandwidth capacity of a link as taught by Ravi in combination with the teachings of Chawla which teaches the dynamic allocation of bandwidth. One of ordinary skill in the art would have been motivated to combine the teachings of Chawla and Ravi in order to create a dynamic allocation of bandwidth method/system wherein it is desirable to provide efficient transmissions of multimedia streams which are deemed quite well known and used very often in the Internet realm (Ravi, col. 1, ll. 16-25).

10. Regarding claim 10, Chawla teaches the data processing system wherein the initial and subsequent link layer operating frequency negotiations are compliant with the IEEE 802.3 standard (Chawla, col. 11, lines 25-36, Chawla discloses the use of wireless networks, IEEE 802.3 is considered just an example of a wireless network).

11. Regarding claim 11, Chawla teaches the data processing system wherein the network interface measures the effective data rate by accumulating information indicative of the amount of network traffic communicated with the switch via the network link during a specified interval and calculating the effective data rate based thereon (Chawla, col. 13, lines 20-27).

12. Regarding claim 12, Chawla teaches the data processing system, wherein:

the network interface performs a subsequent link layer operating frequency negotiation to establish an increased total bandwidth capacity of the network link at an increased operating frequency of the link responsive to determining that the effective data rate is greater than a specified percentage of the initial total bandwidth capacity of

the link, wherein the increased operating frequency is higher than the initial operating frequency (Chawla, col. 13, lines 10-20).

13. Regarding claim 13, Chawla teaches the data processing system wherein the initial and subsequent link layer operating frequency negotiations are initiated by the switch (Chawla, col. 13, lines 31-44).

14. Regarding claim 14, Chawla teaches the data processing system wherein the initial and subsequent link layer operating frequency negotiations are initiated by the server device (Chawla, col. 13, lines 31-44).

15. Regarding claim 15, Chawla teaches the data processing network comprising:

the data processing system of claim 7 (see rej. of claim 7);

the switch (fig. 3); and

the link (fig. 3).

16. Regarding claim 21, Chawla teaches a computer program product, comprising:

a tangible computer-readable storage medium (fig. 3, communication devices);

machine-executable instructions, stored on the tangible computer-readable storage medium, for conserving energy in a data processing network having a switch, a server, and a network link connecting the switch to the server (fig. 3, network devices), wherein the instructions when executed cause a machine to perform:

performing an initial operating frequency negotiation between the server and the switch, wherein the initial operating frequency negotiation establishes an initial total bandwidth capacity of a network link at an initial operating frequency of the network link (col. 5, lines 20-25 and col. 12, line 61 – col. 13, line 4);

measuring an effective data rate of the server based on network traffic communication between the server and the switch (col. 12, line 61 – col. 13, line 4); and

determining whether or not the effective data rate is materially different than a current bandwidth of the network link (col. 13, ll. 20-24).

Chawla teaches the negotiation and determination of an effective data rate of a current bandwidth of the link and performing subsequent negotiations to establish a modified operating frequency wherein the modified operating frequency is closer to the effective data rate than the initial operating frequency (col. 13, lines 20-24) but does not clearly recite wherein the negotiation is performed at the network link layer. However, in related art and in the same field of endeavor, Fedyk teaches a method for dynamically assigning bandwidth at a link layer level (fig. 2 and col. 3, line 61 - col. 4, line 3) wherein a path connection setup routine is performed based on available bandwidth and link/class traffic engineering. One of ordinary skill in the art at the time of the applicants' invention would have found it obvious to implement the ability to optimize link layer negotiation as taught by Fedyk in combination with the teachings of Chawla which teaches the dynamic allocation of bandwidth. One of ordinary skill in the art would have been motivated to combine the teachings of Chawla and Fedyk in order to create a dynamic allocation of bandwidth method/system at a link level (Fedyk, col. 3, ll. 41-46).

Chawla teaches the determination of an effective data rate of a current bandwidth of the link and performing subsequent negotiations to establish a modified operating frequency wherein the modified operating frequency is closer to the effective data rate than the initial operating frequency (col. 13, lines 20-24) but does not clearly

recite the steps of "instructions that detect whether or not the link is underutilized by, instructions that, responsive to detecting that the link is underutilized, performs a negotiation to establish a reduced operating frequency of the link." However, in related art and in the same field of endeavor, Ravi teaches a method for dynamically adjusting bandwidth rates based on performance characteristics, including a step for determining the possibility to change the effective data rate to below the capacity or decreasing bandwidth of a link as is possible (see column 7 of Ravi, lines 16-25). One of ordinary skill in the art at the time of the applicants' invention would have found it obvious to implement the ability to decrease the bandwidth capacity of a link as taught by Ravi in combination with the teachings of Chawla which teaches the dynamic allocation of bandwidth. One of ordinary skill in the art would have been motivated to combine the teachings of Chawla and Ravi in order to create a dynamic allocation of bandwidth method/system wherein it is desirable to provide efficient transmissions of multimedia streams which are deemed quite well known and used very often in the Internet realm (Ravi, col. 1, ll. 16-25).

17. Regarding claim 22, Chawla teaches the computer program product wherein measuring the effective data rate includes determining an amount of network traffic traversing the network link during a specified interval (Chawla, col. 13, lines 20-27).

18. Regarding claim 23, Chawla teaches the computer program product wherein the instructions further cause the machine to perform:

determining whether or not the network link is over-utilized by detecting whether the effective data rate is greater than a specified percentage of the initial total bandwidth capacity of the link (Chawla, col. 13, lines 20-24); and

responsive to detecting that think link is over-utilized because the effective data rate is greater than a specified percentage of the initial total bandwidth capacity of the link, performing a subsequent link layer operating frequency negotiation to establish an increased total bandwidth capacity of the network link at an increased operating frequency of the link, wherein the increased operating frequency is higher than the initial operating frequency (Chawla, col. 13, lines 27-30).

19. Regarding claim 24 Chawla teaches the determination of an effective data rate of a current bandwidth of the link and performing subsequent negotiations to establish a modified operating frequency wherein the modified operating frequency is closer to the effective data rate than the initial operating frequency (col. 13, lines 20-24) but does not clearly recite the steps of "wherein the decreased operating frequency is a lowest operating frequency accommodated by the link between the server and switch that is sufficient to handle the effective data rate." However, in related art and in the same field of endeavor, Ravi teaches a method for dynamically adjusting bandwidth rates based on performance characteristics, including a step for determining the possibility to change the effective data rate to below the capacity or decreasing bandwidth of a link as is possible (see column 7 of Ravi, lines 16-25). One of ordinary skill in the art at the time of the applicants' invention would have found it obvious to implement the ability to decrease the bandwidth capacity of a link as taught by Ravi in combination with the

teachings of Chawla which teaches the dynamic allocation of bandwidth. One of ordinary skill in the art would have been motivated to combine the teachings of Chawla and Ravi in order to create a dynamic allocation of bandwidth method/system wherein it is desirable to provide efficient transmissions of multimedia streams which are deemed quite well known and used very often in the Internet realm (Ravi, col. 1, ll. 16-25).

20. Regarding claim 25, Chawla teaches the method of claim 1, and further comprising: automatically repeating, at specified intervals during the operation of the network, the determination of the effective data rate and contingent initiation of a subsequent negotiation to automatically and periodically modify the operating frequency to a lowest operating frequency compatible with the effective data rate (Chawla, col. 13, lines 20-27).

21. Regarding claim 26, Chawla does not explicitly teach the limitation. However in related art, Ravi teaches the method of claim 1, and further comprising: in response to performing the subsequent link layer negotiation, decreasing an operating frequency and power consumption of a network interface of the server (col. 7, ll. 16-25, a lower power consumption is deemed a by-product of decreased bandwidth usage). One of ordinary skill in the art would have been motivated to combine Chawla and Ravi in claim 26 under the same rationale set forth with respect to claim 24.

22. Regarding claims 27 and 30 Chawla teaches the determination of an effective data rate of a current bandwidth of the link and performing subsequent negotiations to establish a modified operating frequency wherein the modified operating frequency is closer to the effective data rate than the initial operating frequency (col. 13, lines 20-24)

but does not clearly recite the steps of "wherein the modified operating frequency is a lowest operating frequency accommodated by the link between the server and switch that is sufficient to handle the effective data rate." However, in related art and in the same field of endeavor, Ravi teaches a method for dynamically adjusting bandwidth rates based on performance characteristics, including a step for determining the possibility to change the effective data rate to below the capacity or decreasing bandwidth of a link as is possible (see column 7 of Ravi, lines 16-25). One of ordinary skill in the art at the time of the applicants' invention would have found it obvious to implement the ability to decrease the bandwidth capacity of a link as taught by Ravi in combination with the teachings of Chawla which teaches the dynamic allocation of bandwidth. One of ordinary skill in the art would have been motivated to combine the teachings of Chawla and Ravi in order to create a dynamic allocation of bandwidth method/system wherein it is desirable to provide efficient transmissions of multimedia streams which are deemed quite well known and used very often in the Internet realm (Ravi, col. 1, ll. 16-25).

23. Regarding claims 28 and 31, Chawla teaches the method of claim 1, and further comprising: automatically repeating, at specified intervals during the operation of the network, the determination of the effective data rate and contingent initiation of a subsequent negotiation to automatically and periodically modify the operating frequency to a lowest operating frequency compatible with the effective data rate (Chawla, col. 13, lines 20-27).

24. Regarding claims 29 and 32, Chawla does not explicitly teach the limitation. However in related art, Ravi teaches the method of claim 1, and further comprising: in response to performing the subsequent link layer negotiation, decreasing an operating frequency and power consumption of a network interface of the server (col. 7, ll. 16-25, a lower power consumption is deemed a by-product of decreased bandwidth usage). One of ordinary skill in the art would have been motivated to combine Chawla and Ravi in claim 26 under the same rationale set forth with respect to claim 24.

25. System claim 33 is substantially similar to claim 1 and is therefore rejected under the same rationale.

Response to Arguments

26. Applicant's arguments, see remarks, filed 25 April 2011, with respect to the rejection(s) of claim(s) 1 under 35 USC 103(a) in view of Chawla et al. (U.S. 6,876,668), and Ravi et al. (US 6,292,834 B1), have been fully considered but are not persuasive. Applicant argues: (A) "performing an initial link layer negotiation," (B) "measuring an effective data rate," and (C) "performing a subsequent link layer negotiation to establish a modified operating frequency." With respect to claim 4, applicant argues (D) that the cited art does not teach the utilization of "IEEE 802.3 standard." With respect to claim 5, applicant argues (E) that the cited art does not teach the "measuring" step. With respect to claim 6, applicant argues (F) that the cited prior art does not teach "performing a subsequent link layer operating frequency negotiation to establish an increased total bandwidth capacity of the network link." With respect to claim 24, applicant argues (G) that the cited prior art does not teach "the decreased operating frequency is a lowest

operating frequency of the network link accommodated by the server and switch that is sufficient to handle the effective data rate." With respect to claim 25, the applicant argues (H) that the cited prior art does not teach "specified intervals." With respect to claim 26, the applicant argues (I) that the cited prior art does not teach "in response to performing the subsequent link layer operating frequency negotiation, decreasing an operating frequency and power consumption of a network interface of the server." The examiner respectfully disagrees for the following reasons.

(A) Applicant's argument with respect to claim 1 with respect to "performing an initial link layer negotiation" is not deemed persuasive. Chawla teaches the establishment of an initial bandwidth negotiation in col. 5, lines 20-25 and col. 12, line 61 – col. 13, line 4. Specifically, Chawla teaches a first bandwidth reservation request which is considered within the claim scope of an "initial bandwidth negotiation." Chawla does not explicitly teach the negotiation being done on the "link level." Fedyk is relied upon for teaching this aspect wherein Fedyk teaches a method for dynamically assigning bandwidth at a link layer level wherein a path connection setup routine is performed based on available bandwidth and link/class traffic engineering (fig. 2 and col. 3, line 61 - col. 4, line 3).

(B) Applicant's argument with respect to claim 1 under 35 USC 103(a) in view of Chawla and Ravi with respect to "measuring an effective data rate" is not deemed persuasive. The examiner submits the rejection of this limitation should be maintained for the same reasons set forth in the Examiner Answer mailed 05 August 2008 and affirmed by the BPAI on 28 October 2010. The examiner submits that the "measuring" of an effective data rate is deemed functionally equivalent to prior claimed language of

“determining" an effective data rate. The examiner submits that at least what is taught by the Chawla patent is within the scope of the claim limitation. Chawla teaches the determination of an effective data rate based on network traffic communicated over a link wherein Chawla teaches in column 12, line 61 – column 13, line 4 wherein it is determined if a requested resource (i.e. 100 Kbps bandwidth) is available. Therefore, the communication link is tested to adequately determine whether an effective data rate, in this embodiment 100 Kbps bandwidth, is actually available. If available, the requested bandwidth is negotiated and granted. Therefore, Chawla at least teaches determining of an effective data rate (i.e. allocate 100 Kbps bandwidth) based on network traffic communicated over a link (i.e. determine that the requested resource is available for use).

(C) With respect to “performing a subsequent link layer operating frequency negotiation,” the examiner submits that the cited prior art teaches within the scope of the claim. Chawla teaches subsequent negotiation in at least With respect to “link layer" negotiation, as set forth in argument (A), Fedyk teaches a method for dynamically assigning bandwidth at a link layer level (fig. 2 and col. 3, line 61 - col. 4, line 3) wherein a path connection setup routine is performed based on available bandwidth and link/class traffic engineering.

(D) With respect to the utilization of the IEEE 802.3 standard, it is considered just an example of a wireless network, and as claimed, a “standard.” The utilization of IEEE 802.3 is therefore considered well-known and would have been an obvious variation to one of ordinary skill in the art based merely on the fact that it is a standard. Applicant

has failed to explicitly point out the novelty or non-obviousness of utilizing a well-known standard.

(E) With respect to the "measuring" step claimed in claim 5, the examiner submits that the cited prior art teaches within the scope of the claim. As set forth in argument (B), the examiner submits that the "measuring" of an effective data rate is deemed functionally equivalent to prior claimed language of "determining" an effective data rate. The examiner submits that at least what is taught by the Chawla patent is within the scope of the claim limitation. Chawla teaches the determination of an effective data rate based on network traffic communicated over a link wherein Chawla teaches in column 12, line 61 – column 13, line 4 wherein it is determined if a requested resource (i.e. 100 Kbps bandwidth) is available. Therefore, the communication link is tested to adequately determine whether an effective data rate, in this embodiment 100 Kbps bandwidth, is actually available. If available, the requested bandwidth is negotiated and granted. Therefore, Chawla at least teaches determining of an effective data rate (i.e. allocate 100 Kbps bandwidth) based on network traffic communicated over a link (i.e. determine that the requested resource is available for use).

(F) With respect to "performing a subsequent link layer operating frequency negotiation to establish an increased total bandwidth capacity of the network link" the examiner submits that the cited prior art teaches within the scope of the claim. Chawla teaches in column 13, lines 20-25, the steps of negotiating for better utilization of a network link in order to adequately transfer data over a network link. A negotiation is

made based on the type of data to be transferred which requires a certain level of bandwidth. A reservation is made if adequate resources are available.

(G) With respect to "the decreased operating frequency is a lowest operating frequency of the network link accommodated by the server and switch that is sufficient to handle the effective data rate," the examiner submits that the cited prior art teaches within the scope of the claim. Ravi teaches within the scope of a decreased operating frequency with respect to dynamically adjusting bandwidth based on performance characteristics. Ravi teaches in column 7, lines 16-25, the enablement of dynamically adjusting bandwidth rates based on performance characteristics, including a step for determining the possibility to change the effective data rate to below the capacity or decreasing bandwidth of a link as is possible. Ravi teaches further in lines 26-34 the utilization of specific variables that determine values to increase and/or decrease for bandwidth consumption. This computation therefore is considered to teach the "decreased operating frequency" as claimed.

(H) With respect to adjustment at "specified intervals" the examiner submits that the cited prior art teaches within the scope of the claim. Chawla teaches the establishment of and adjustment thereof, of bandwidth allocation (col. 13, ll. 7-20). Chawla teaches further the continuous adjustment and changing thereof of a user's allocated bandwidth (col. 13, ll. 45-50). Applicant fails to adequately define what the "specified intervals" entail with respect to time or a trigger of some sort. The prior art teaches that the user's bandwidth is changed continuously during a session and therefore considered to be within the claimed broad scope of "specified intervals."

(l) With respect to “in response to performing the subsequent link layer operating frequency negotiation, decreasing an operating frequency and power consumption of a network interface of the server,” the examiner submits that the cited prior art teaches within the scope of the claim. It is submitted that the Ravi teaches within the scope of the claim in at least column 7, lines 16-25. Ravi teaches the decreasing of an operating frequency. It is deemed obvious to one of ordinary skill in the art that the less a network component, in this case a network interface, is used the less power it will require. Therefore, it is considered an obvious result that a lower power consumption will result.

Conclusion

THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Benjamin Ailes whose telephone number is (571)272-3899. The examiner can normally be reached Monday-Friday, IFP Hoteling schedule.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Glenton Burgess can be reached on 571-272-3949. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/B. A. A./
Examiner, Art Unit 2442

/Douglas B Blair/

Primary Examiner, Art Unit 2442